Use and Scope of Method A

Issue

Should Ecology consider revising the Model Toxics Control Act (MTCA) cleanup regulation to make it easier to use Method A at a broader range of sites?

Problem Statement

Under the current MTCA rules, there are three methods (Methods A, B and C) for establishing cleanup levels.[1] Method A was designed to provide an easy-to-use method for sites that involve a small number of contaminants.

Most people believe that the Method A cleanup level tables facilitate cleanup actions by providing simple answers. However, people have identified several problems with the current rule provisions in terms of facilitating cleanup actions:

- The current tables contain too few chemicals.
- The current rule places too many constraints on the use of table values.
- The current rule does not provide simple answers that address all relevant exposure pathways and health endpoints (e.g., vapor intrusion, terrestrial ecological risks).

On the other hand, some people believe the current Method A tables complicate efforts to establish protective cleanup levels because:

- The Method A tables are a barrier to considering all relevant exposure pathways.
- The Method A tables are a barrier to using new toxicity information.

Background

Under the current MTCA rules, there are three methods (Methods A, B and C) for establishing cleanup levels. Ecology originally intended that ***Method A*** would be used at relatively small sites that involve few contaminants. Specifically, WAC 173-340-704(1) states that Method A may be used at the following types of sites:

> ***(a)*** *Sites undergoing a routine cleanup action as defined in WAC 173-340-200; or*
> ***(b)*** *Sites where numerical standards are available in this chapter or applicable state and federal laws for all indicator hazardous substances in the media for which the Method A cleanup level is being used.*

[1] In this issue summary the terms MTCA cleanup regulation and MTCA rule are used interchangeably and refer to Chapter 173-340 WAC.

The rule defines a **"Routine cleanup action"** as "…a remedial action meeting all of the following criteria:

- *Cleanup standards for each hazardous substance addressed by the cleanup are obvious and undisputed, and allow for an adequate margin of safety for protection of human health and the environment;*
- *It involves an obvious and limited choice among cleanup action alternatives and uses an alternative that is reliable, has proven capable of accomplishing cleanup standards, and with which the department has experience;*
- *The cleanup action does not require preparation of an environmental impact statement; and*
- *The site qualifies under WAC 173-340-7491 for an exclusion from conducting a simplified or site-specific terrestrial ecological evaluation, or if the site qualifies for a simplified ecological evaluation, the evaluation is ended under WAC 173-340-7492(2) or the values in Table 749-2 are used.*

Under Method A, cleanup levels must be at least as stringent as the following:

(a) *Concentrations of individual hazardous substances listed in Tables 720-1, 740-1, or 745-1 in this chapter;*

(b) *Concentrations of individual hazardous substances established under applicable state and federal laws;*

(c) *Concentrations that result in no significant adverse effects on the protection and propagation of terrestrial ecological receptors using the procedures specified in WAC 173-340-7490 through 173-340-7493, unless it is demonstrated under those sections that establishing a soil concentration is unnecessary; and*

(d) *For individual hazardous substances deemed indicator hazardous substances for the medium of concern under WAC 173-340-708(2) and not addressed under (a) and (b) of this subsection, concentrations that do not exceed natural background levels or the practical quantitation limit, whichever is higher, for the substance in question.*

The rule includes three tables that provide Method A cleanup levels for frequently encountered contaminants in ground water (Table 720-1), soil (Table 740-1) and industrial soils (Table 745-1).

New Scientific and Regulatory Information Since 2001 Rule Revisions

Since the 2001 rule revisions, there have been several important scientific and regulatory developments relevant to the current rulemaking process. EPA has updated the toxicity values for several hazardous substances listed in the Method A tables.

Rulemaking Options Being Considered

Ecology is considering several options for addressing this issue during the current rulemaking process. These include:

Limited Revisions to Method A: Under this option, Ecology would make limited changes to the Method A values using the Method B equations and new toxicity information. Changes would be limited to revisions needed to incorporate new standards (e.g., drinking water standards) or updated EPA toxicity values. Table 1 (below) illustrates how the use of new standards and/or toxicity values would impact some of the current Method A ground water cleanup levels. Under this option, Ecology would maintain the current constraints on the use of Method A.

Revised Method A Applicability Requirements: Under this option, Ecology would revise the criteria for deciding how and when Method A could be used to establish cleanup levels for individual sites. For example, Ecology could revise the rule to eliminate the concept of routine cleanup actions and revise the rule to reflect the current use of Method A in a wide range of situations.

Expanded Method A Tables: Under this option, Ecology would publish Method A values for other hazardous substances that have been found at Washington cleanup sites. Ecology would also expand the tables to include multiple columns that include cleanup levels for different pathways (for example, direct contact, soil to ground water, vapor intrusion, ecological protection). Site managers and investigators would need to decide which pathways were applicable and select the most stringent value as the Method A cleanup level. This approach is similar to guidance materials published by the environmental agencies in Oregon, Michigan, and New Jersey.

Get Rid of Method A: Under this option, Ecology would remove the Method A tables from the rule. Ecology would modify the rule to provide one method for establishing cleanup levels. The method would include a standard set of equations/procedures with clear direction on which parameters could be modified on a site-specific basis. Each section would be organized around exposure pathways similar to approaches used by Michigan and Wisconsin. Under this option, Ecology would post pre-calculated standards for multiple pathways on the Ecology Website.

Factors to Consider When Selecting an Option

Developing amendments to the MTCA cleanup regulation will require considering and balancing a number of issues and interests. Ecology believes that the following factors need to be considered when evaluating options for addressing this issue:

- What types of sites are currently using Method A to establish cleanup levels?
- When have Method A values been used in combination with Method B values (for example, using Method A for lead and Method B for other substances)?
- What constraints (if any) should be placed on the use of Method A because of unaddressed risk issues (additive risk, cleanup requirements for high fish consumers, dermal exposure in soil, and impacts to surface water and sediment from contaminated ground water)?
- Should Ecology consider expanding the list of substances included in the Method A tables? If so, which substances should Ecology considering adding to the tables?

- If Ecology were to consider reducing the number of substances included in the Method A tables, which substances would be the highest priority to retain in the rule?
- When using Method A, are people evaluating the potential for vapor intrusion problems? Is there a presumption that Method A values are sufficiently protective of indoor air?
- How frequently has it been necessary to adjust cleanup levels for individual substances based on total site risk requirements? How has that worked?

Table 1: Comparison of Current Method A Ground Water Cleanup Levels and Revised Method A Ground Water Cleanup Levels Calculated using Method B Equations and Current Toxicity Values Included in the CLARC database

Substance	Current Method A Levels (ug/L)	Revised Method A Levels (ug/L)	Rationale
Tetrachloroethylene	5	0.8	The current Method A cleanup level is based on the maximum contaminant level (MCL). The CLARC database includes an updated cancer slope factor (0.54 kg-day/mg) developed by the California Environmental Protection Agency and endorsed by EPA's National Center for Environmental Assessment.[2] Using this value, the revised Method A cleanup level would be 0.8 ug/L (MCL adjusted for a 10^{-5} cancer risk).
Toluene	1,000	640	The current Method A cleanup level is based on the maximum contaminant level (MCL). EPA published a new reference dose (0.08 mg/kg/day) in 2005.[3] Using this, value, the revised Method A cleanup level would be 640 ug/L (MCL adjusted for a hazard index of 1).
Trichloroethylene	5	2.4	The current Method A cleanup level is based on the maximum contaminant level (MCL). The CLARC database includes an updated oral reference dose (0.0003 mg/kg/day) that was developed by EPA's National Center for Environmental Assessment.[4] Using this value, the revised Method A cleanup level would be 2.4 ug/L (MCL adjusted for a hazard index of 1).
Vinyl Chloride	0.2	0.3	The current Method A cleanup level is based on the maximum contaminant level (MCL) adjusted for a 10-5 cancer risk. The CLARC database includes a new cancer slope factor (1.5 kg-day/mg) that applies the EPA cancer risk guidelines published in 2005.[5] The revised Method A cleanup level would be 0.3 ug/L (MCL adjusted for 10^{-5} cancer risk).

[2] Cleanup Levels and Risk Calculation (CLARC) database – Guidance on Toxicological Information. Tetrachloroethylene Toxicity Information (Perc, PCE, Perchloroethylene) CAS #127-18-4. Available on Ecology's Toxics Cleanup Program website.
[3] Environmental Protection Agency. 2005. Toxicological Review of Toluene. Published in IRIS database.
[4] Cleanup Levels and Risk Calculation (CLARC) database – Guidance on Toxicological Information. Recommended Trichloroethylene (TCE) Toxicity Values and MTCA Cleanup Levels CAS #79-01-6. Available on Ecology's Toxics Cleanup Program website.
[5] Cleanup Levels and Risk Calculation (CLARC) database – Guidance on Toxicological Information for Vinyl chloride. Available on Ecology's Toxics Cleanup Program website.